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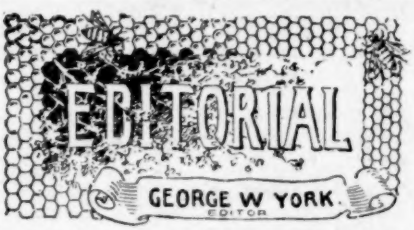


Where Honey Comes From.—On another page of this number of the BEE JOURNAL will be found the promised interesting address delivered by Mr. R. McKnight, at the recent Ontario convention.

Comb Honey 8 Years Old.—Hon. Eugene Secor, of Forest City, Iowa, sent us the following on March 3rd, about a box of comb honey that had been kept for eight years, and still was well preserved:

We have just finished eating a 3-pound box of comb honey that was eight years old. It has been kept, too, under unfavorable conditions a part of the time, having been moved from kitchen to garret several times, and last summer, while we were building, it was exposed to all the changing moods of climate for three months out-of-doors. But it would not stand everything. In handling it somehow got broken, began to leak, and we were obliged to eat it to save it—as the lion protects the lamb. The honey was all right. No one at the table suspected that it was old. It was not granulated in the cells, and I think never has been.

This is no remarkable affair, I suppose. Probably most bee-keepers know that honey can be preserved almost indefinitely if properly taken care of. By the way, I believe I have now an almost ideal place to keep honey in—an attic where it will always be dry and warm—under a tin roof.

EUGENE SECOR.

Bees and Fruit is the title of a 16-page pamphlet just issued by A. I. Root, of Medina, Ohio. It shows the important part played by bees in the fertilization of blossoms, giving the evidence *pro* and *con*. It is the "Symposium on Bees and Fruit" that we mentioned on page 264, put in pamphlet form for handy distribution by bee-keepers among fruit-growing neighbors who think that bees are detrimental to their interests. Prices are: Single copies, postpaid, 2 cents each; 25 copies, 40 cents; 50 copies, 75 cents; and 100 copies, $1.25.

Not Supply Dealers.—Our subscribers will please remember that we are *not* dealers in bee-supplies; so do not send to us for a catalogue—send to those who advertise supplies in the BEE JOURNAL, and they will be glad to accommodate you.

Wintering Well.—So far reports seem to indicate that bees are wintering quite nicely all over the country. Now if they will only "spring" equally well, bee-keepers will be prepared to harvest a large crop of honey—providing the flowers "give down" the nectar.

Prof. Cook and His New Home.—As many of the friends of Prof. A. J. Cook will be pleased to know just what he is doing in his new home at Claremont, Calif., it gives us a great deal of pleasure to make the following statements:

He is Professor of Zoology and Entomology at Pomona College—precisely the same position which he held in the Michigan Agricultural College.

Pomona College is a denominational institution, like Oberlin, Amherst, Olivet, etc.

The teachers are all earnest Christian men, and nearly all the students are Christians. Prof. Cook writes that the spirit in the college is delightful. It is, he says, entirely safe to send young gentlemen or ladies there. The influence is such that no one can experience it without being inspired to good work and pure life. Such a college must be just such a leaven as California, or any other society, needs.

The President of Pomona College is not only a broad-minded Christian man, but he is also eminently practical. He saw that California was pre-eminent for its fruit and bee interests, and so he was desirous to secure a practical entomologist, and a person able to teach bee-keeping; so he lured from Michigan (where Prof. Cook had taught for 27 years) the person who has perhaps done as much to aid the science of entomology, especially in its economic trend, as any one in the country.

Prof. Cook is delighted with his new home and work. He writes:

This is a delightful country, with a climate that is unsurpassed. The fruit is wonderfully varied and delicious. The people are temperate, wide-awake, and mostly Christians. The college is almost ideal, with nearly 200 of as earnest, wide-awake students as one can find anywhere. The first class graduates the coming summer, and will number twelve. Each one of them bids fair to become a power for good in the State. A. J. COOK.

We are indeed glad that Prof. Cook has gone to such a grand field in which to work and be useful to his fellow men. The BEE JOURNAL wishes him abundant success, and many, many years full of rich and honored labors for himself and all humanity.

Bro. Wm. J. Ellison, who lived near Catchall, S. C., died on Feb. 9, 1894, at the age of 45 years. He was a prominent queen-breeder, and an old-time bee-keeper. The *Watchman and Southron*, a local newspaper, speaks tenderly and highly of him, as follows:

William J. Ellison was a man of education and intelligence, good character, and highly respected. He came of a family that for several preceding generations has lived in the Stateburg community, esteemed and respected by the people of both races. He was a devout member of the Episcopal Church, and leaves a widow and four children, all boys, to mourn his death. He was ill for a long time, but bore his sufferings with Christian submission and unwavering faith. As an apiarist, he was, perhaps, the best informed man in the State, and his queens were in demand all over the country. He regularly every year made an exhibition of his bees and other products at the State Fair, taking many premiums. As a man and citizen he will be missed in the community, where his influence was always for good.

What higher tribute can be paid to the memory of any man than the foregoing? No nobler monument than deserved praise and loving remembrance can be given to mortals. To live well means to die well. Let us all try to merit the plaudit "Well done," when life shall have ended.

The BEE JOURNAL extends sincere sympato the bereaved family, and trusts that they may also live so that a blessed re-union may be assured on the "other shore."

Unfortunate Happenings.—Last fall a bee-keeper in one of the lower honey counties of California shot and killed a man, both being at the time under the influence of liquor. On Feb. 17th another shooting affray, in which bee-keepers figured, was enacted in Orange county. As we learn from the telegraphic dispatches, a Mr. Louis Emerson, a young gentleman of hitherto unblemished character, along with his brother took up some claims to Government lands in Santa Argo canyon, some 20 miles from Santa Ana, where the brother named lives; and when the brothers went to the place, which they use as a bee-ranch, they found it in possession of a half-breed Mexican, who set up a claim to the property.

The squatter was ordered off, but instead of surrendering possession, he started to attack Emerson's brother, and would have probably killed him had not the younger brother pulled his gun and shot the Mexican dead, several shots being fired into his body. The brothers drove into Santa Ana, and the one who did the shooting was taken in charge by the sheriff, he delivering himself into custody.

One dispatch states that the Mexican took possession of the claim during the brothers' absence, and upon their return attacked the older brother with a club, hoping to drive him off, when the younger brother shot him to save his brother's life.

Verily, the life of a bee-keeper in the wild canyons of California is not always one round of sweet and giddy pleasure.

The Standard Dictionary.— A work of exceptional interest and importance is the "Standard Dictionary of the English Language," issued by Messrs. Funk & Wagnalls, of New York city. The work will be complete in two volumes; and the first volume, covering the alphabet from A to L, has been received. It is a superb volume, the illustrations are finely executed, and the colored plates are a marvel of clear and elegant printing. In the preparation of the work, there have been some interesting particulars. The outlay in money will be nearly $1,000,000. There have been engaged upon the work since its beginning, four years ago, about 250 office-editors and specialists, many of whom are scholars of international reputation. Dr. I. K. Funk, the editor-in-chief, had associated with him Prof. March, the well-known philologist, as consulting editor; and John D. Champlin, Rossiter Johnson, and A. E. Bostwick as office editors.

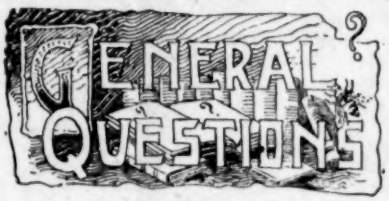
The feature which distinguishes this dictionary from others in common use, is the order of definition. If a word has two or more meanings, the most common meaning has been given first; that is, preference has been given to the "order of usage" over the historical order. The aim has been to remove everything that stands between the vocabulary word and the meaning most generally sought after by the average reader, and, in this way, to enable him to get the information desired with ease and certainty. The obsolescent and obsolete meanings and the etymology are given last. The value of such an arrangement for busy people will be appreciated by none more than by those who have occasion to use dictionaries most. The vocabulary will be found extraordinarily rich and full, and —although the rules for exclusion of useless words and phrases that have been followed are most exacting—far exceeding that of any dictionary that has preceded this. The following will show to what proportions the language has grown. The full number of words and terms in our standard dictionaries for the entire alphabet is as follows: Johnson, 45,000; Stormonth, 50,000; Worcester, 105,000; Webster (International), 125,000; Century (six volumes, complete),225,000; Standard, nearly 300,000.

The German double-hyphen is used throughout to distinguish compound words from divided syllables. As to spelling, the editors have manifestly decided in favor of the phonetic principle wherever that was practicable. When two ways of spelling the same word are used by recognized authorities, preference has been given usually to the simpler form.

Altogether the distinguishing features of this work are so marked and so well developed that the work will have its value even where the most elaborate lexical apparatus is in use.

Dr. C. C. Miller, of Marengo, Ill., so well and favorably known to bee-keepers everywhere, had the distinuguished honor to be selected to furnish the apiarian terms and definitions for this dictionary; so it ought to be more correct in our line than any other dictionary now published.

It is to be sold by subscription only, and will appear in one and two volume editions. The two volumes bound in leather will cost $15; in full morocco, $20; one volume in leather, $12; in morocco, $16.



ANSWERED BY

DR. C. C. MILLER,

MARENGO, ILL.

In this department will be answered those questions needing IMMEDIATE attention, and such as are not of sufficient special interest to require replies from the 20 or more apiarists who help to make "Queries and Replies" so interesting on another page. In the main, it will contain questions and answers upon matters that particularly interest beginners.—ED.

Most Desirable Hive and Frame.

1. Which is the most desirable hive for out-of-door wintering?

2. Which is the most desirable size of brood-frame for comb honey. F. J. J.
Clayville, N. Y.

ANSWERS.—1. Perhaps the old-fashioned straw hive. Among frame hives, perhaps the chaff hive.

2. I'm not sure that will ever be entirely settled. At least not so that all will agree upon it. The fact that after a great many sizes have been tried a very large number to-day prefer about the size first settled upon by Father Langstroth, seems to indicate that it is at least as good as any. Perhaps it doesn't make much difference. The original Langstroth frame was 17⅜x 9⅛. To accommodate the use of one-pound sections, the frame was made ¼ inch shorter and called the "Simplicity" frame.

Transferring—Introducing—Poultry.

About 10 years ago I was with my uncle who run a large apiary in Indiana, and I learned something about bees then, but it has been so long, and without any practical experience, I forgot almost all that I learned then; but I caught the bee fever, and it has been growing on me ever since, in conse-

qnence of which I have pushed off my little barque with a determination to stay with it until I am thoroughly convinced that there is no profit in the business.

Last fall, about Nov. 1st, I purchased 23 colonies, said to be Italians, but they are a cross between Italians and blacks. They were in boxes of almost all shapes and sizes. Eight of them were late swarms, with very little honey; 15 were old, ranging from 1 to 4 years, with honey ranging from 40 to 75 pounds to the colony. I moved them home, and started in transferring the bees and honey into movable-frame hives (the same kind that my uncle used). I transferred the 8 late swarms first, thinking that if they died I would not lose much, as they only cost me 25 cents apiece. I drove 2 swarms into one hive, putting the 8 swarms into 4 hives, and fed them until they had 20 pounds of syrup and honey each. They went right to work, and stuck all the comb fast to the frames, and cleaned up every thing, and in a short time had one or two frames nearly filled with brood. (The weather is warm here in the valley, so that bees fly nearly every day in the year.) They did so well, as I thought, that I transferred 3 of the old ones. They have done about the same as the first ones; they have kept up their brood-rearing until the last two weeks they have slacked up on that business.

1. What shall I do next—feed them some more?

2. What would you advise about the others—transfer now, or wait until later in the spring? The last that I transferred was Dec. 14th. If I transfer now, I would lose but little if I did not transfer the brood, as they have but very little. They will begin to gather pollen in about a month from now.

3. When is the best time of the year to introduce queens?

4. I am thinking very strongly of going into the poultry business in connection with bees. What is your advice in regard to that? Bees do well in this country, and there is always a good market for poultry. T. E. G.

Oregon City, Oreg.

ANSWERS. — 1. If they are getting enough from natural stores, or if they have enough in their hives, there is no need of feeding.

2. By the time this reaches you, it will probably be so late that you will gain nothing by waiting longer.

3. There is less danger of loss in introducing any time when bees are storing. They seem better natured during prosperity than when hard times come.

4. Bees and poultry go well together, especially if you crowd the poultry business so as to have most of the laying and sitting over by the time the busy time of bee-work comes. At least that's the case in the region of Chicago, but it is possible that winter layers may not be best in your climate.

Bees Sting Each Other.

When one bee stings another, or a queen, does the sting usually prove fatal? When one queen stings another, does she lose her sting? Did you ever see one queen sting another?

In introducing a queen last fall, she was stung just under the wing, where it joins the body. The stinger was well inserted, and was removed with some difficulty. I expected to find her dead in the morning, but was very much astonished to find her alive and all right. The part where she was stung did not swell in the least. F. E. H.

Logan, Iowa.

ANSWER.—It is a rare thing that one bee stings another without the sting being fatal. Yes, I have seen one queen sting another, and in that case I think the sting is always fatal, and that the victor never loses her sting. A queen thrusts her sting into the breathing holes, if I am not mistaken, making it easily drawn out. But I have seen a few cases in which workers left their stings in other bees.

What is Wrong?—Cleaning Combs.

1. What is wrong, and what shall I do with these bees? We had a week's warm weather and the bees gathered some pollen, and then there came 3 or 4 days of freezing weather, and my bees began to die, or three colonies at least—two weak ones, and one of the best hybrids I had. They began to bring the dead out by the hundred, and some of them would be still moving but unable to crawl. I opened two of the hives, and there was about a hat full of dead bees on the bottom-boards. The combs and hives were clean and nice, and with plenty of nice, sealed honey. The bees that were alive appear to be all right. There was plenty of honey around the cluster, which was in a dry, warm place, and one of the colonies was extra large. I haven't looked into it yet. One of the two that I examined was queenless, and

the other one had a laying queen and about a frame of brood and eggs. Those three colonies stand together.

2. I have some combs containing honey, and have no extractor. I would like to save the combs, and would like to let my bees empty them, but I would not like to put them on top of the hives, as the weather is likely to change from warm to freezing, and then the hives would be too large. Can you give some plan that is safe outside of the hives? Would it do to put them one or two hundred yards off from the hives, and allow the bees to clean them? M. W. G.

Bankston, Ala.

ANSWERS.—1. It is a pretty hard matter to guess straight at such a distance. The queenless colony may be explained by its queenlessness, the bees all being old. The few days of warm weather would stir them into unusual activity, and then the freezing weather would be too much for them. Sometimes a cold snap coming suddenly after a warm spell catches a lot of the bees away from the cluster and they are chilled to death.

Sometimes it will seem as if bees are dying off very fast, when it is only the bees that have been gradually dying from old age all winter, and the bees carry them out when the weather allows.

There is a bare possibility that there is something unwholesome about their stores, but very likely all will turn out well just as soon as the weather allows them to fly every day.

2. Set them 50 yards or more from the bees, and close them up in such a way that only two or three bees can get in at a time. If you leave them entirely open, the bees will tear the combs to pieces. Leave them standing a few days after the bees are through with them. If you take them away before the bees are quite done with them, there is some danger of robbing.

Eyes of Bees, Southern Queens, Etc.

Will you please answer the following questions in the BEE JOURNAL:

1. What is the use of the three little eyes in the shape of a triangle on the head of a bee?

2. Does transportation through the mails affect a queen in any way as to prolificness and longevity?

3. Will a Southern bred queen and her progeny be as hardy in our Northern climate as one bred here?

4. Which facing is the best for hives in winter and early spring?

5. Is there any foundation manufacturer making drone-comb foundation?

6. Have you ever seen a queen depositing eggs?

It is snowing here today. Our winter is just beginning to set in, and the Ohio river is rising very rapidly; it is probable we will have a late spring in this locality. J. C. W.

Evansville, Ind., Feb. 14.

ANSWERS.—1. The general opinion seems to be that the three single eyes, or ocelli, are for vision at short range. I think it is Grimshaw, an English authority, who suggests that they may be for the purpose of producing a sort of phosphorescent light by which bees are enabled to work in the dark.

2. Certainly it does in some cases. There seems to be a general agreement that if a queen in full laying is mailed, she is injured thereby as to her laying qualities, but not as to longevity; while a young queen just beginning to lay, or a queen that has been taken from the hive for two or three days, is not injured by mailing. I've had a number of queens that had been shipped from Italy, and they seemed to be all right.

3. The general testimony is that she will.

4. I don't know that it makes any difference. At times the bright rays of the sun shining directly into the hive seems to do mischief by enticing the bees out when too cold for them to fly, in which case a northern exposure might seem preferable, but a board or screen of some kind in front of the hive would act as a safeguard with a southern or eastern exposure. A western exposure would seem objectionable where west winds prevail.

5. Not that I know of. Some years ago A. I. Root made foundation with 4½ cells to the inch, but it did not meet with favor.

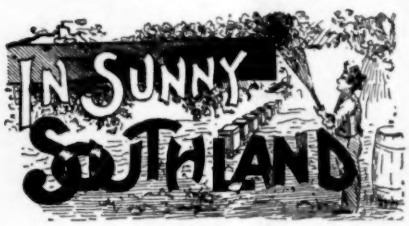
6. Many a time. Lift out the frame the queen is on, at a time when she is laying heavily, and if you do it quietly an Italian queen will often keep right on laying.

Convention Notices.

TEXAS.—The Texas State Bee-Keepers' Association will hold their 16th annual meeting at Greenville, Tex., on Wednesday and Thursday, April 4 and 5, 1894. Everybody invited. No hotel bills to pay. We expect a large meeting and a good time. Don't fail to come.

Beeville, Tex. E. J. ATCHLEY, Sec.

Have You Read page 351 yet?



CONDUCTED BY
MRS. JENNIE ATCHLEY,
BEEVILLE, TEXAS.

He Struck a Key-Note.

I think Mr. B. Taylor strikes one of the key-notes in his closing paragraph on page 218, when he says: "Friends, there is plenty of room for our pleasant calling. The flowers will no doubt continue to yield nectar. We must produce better goods, market them more wisely than heretofore, and we shall easily find room for a greatly increased product at fair prices."

This is one thing that will no doubt apply to all countries alike, and is a saying well worth rehearsing.

JENNIE ATCHLEY.

Interested and Instructed.

MRS. ATCHLEY:—I feel almost acquainted with you, from having read your writings for the past few years in the AMERICAN BEE JOURNAL.

I find your letters very interesting and instructive, and would like very much to become better acquainted. I have 110 colonies of bees. C. M. ELDER.

Ennis, Tex.

Advantages of Dividing for Increase.

We will suppose that our bees are ready to swarm March 1st. Now let us place half of each of the colonies on new stands, leaving the old queens on the old stands, but taking most of the brood with the part set off, as it has no queen. Have a queen-cell ready to hatch to give each new colony or division, and these colonies will all get ready for the first real honey-flow May 15th, and we will get about the same surplus from all alike, thus dispensing with all the risk of losing swarms, and the time lost in watching and hiving.

You may say it will do just as well to give the old colony a queen-cell ready to hatch after a natural swarm issues, but the difference in labor and having things just as I want them, is an item with me.

Then in September, when our last good flow comes from broom-weed, we can, if we wish increase, divide all strong colonies in the same manner as above, and they will all likely fill their hives for winter. This plan will give the keeper a chance to reap a good harvest, and also increase his bees 3 to 1, and can easily and safely be done if caution and good bee-keeping judgment is used. This is the plan that I shall run an out yard on this year, and I will be sure to tell you of my success or failure at the end of the season.

Now, I am not giving this as the *only* plan, mind you, or the only plan I use, but if properly followed out by one who knows how to take advantage of things—bees, flowers, etc.—it will be almost certain to result in success.

JENNIE ATCHLEY.

A Letter of Thanks.

MRS. ATCHLEY:—I feel that I never can thank you enough for your kind letter which gave me information that I have not found in "A B C of Bee-Culture." A. P. LAKE.

Batesburg, S. C.

Hive for the South—Moving Bees.

In answer to an article about hives, on page 174, I would say that I have been a practical bee-keeper for 9 years, and have experimented with 7 different kinds of hives, and have given them a fair test. I am in love with a hive 12x14 inches in the clear, with 9 frames. I have tested the Simplicity-Langstroth, both 8 and 10 frames; a modified Langstroth hive 8 inches deep, with 10 frames; and a shallow hive 12x22 inches in the clear, and 6 inches deep. I find the last a good hive for comb honey, but I can secure more honey from the first hive mentioned. The brood-nest is nearly square, and the bees breed up early in the spring, and winter better.

The best yield of comb honey was from a hive 12x14 inches, with 9 frames in the brood-nest. I took 248 one-pound sections of nicely sealed honey from one hive, and made 2 nuclei from it in early spring; and one of the nuclei gave 48 one-pound sections nicely filled and sealed.

Now, Mr. White, I think if you will

experiment more thoroughly, you may find a hive that you will like better than the Langstroth hive. I have now 7 hives in my yard, but I will transfer all my bees into the square hive this spring.

About hauling bees: I notice a friend in Tennessee that wanted to move his bees 30 miles. I have just brought 25 colonies 20 miles. I nailed the bottoms and tops on, and put about 3 inches of straw in the bottom of the wagon, and hauled them home without breaking any combs down, over a very rough road. Please try it. J. W. TAYLOR.

Ozan, Ark., Feb. 24.

Drones from Imported Queens.

MRS. ATCHLEY:—Should the drones from an imported queen show 3 yellow bands, or should they mark more yellow than that? If not, how should they be marked? A. P. LAKE.

Batesburg, S. C.

Friend Lake, in answering your questions as best I can, I will say that the drones from imported queens are much like the drones from home, or domestic reared Italians—more or less mixed. The drones do not seem to be as fixed in their markings as the workers. Some imported queens produce drones almost black, or of a dark brown color, and some produce drones mixed, some showing yellow bands, and some none. When I am selecting a breeder, I choose queens producing both drones and bees as nearly uniform as possible, other good qualities combined, etc.; and especially a queen that will duplicate herself in her daughters. It is a nice job to select our breeding queens, when we are looking after the improvement of the stock for both markings and honey, prolificness, and I will add, vitality, gentleness, and long life. JENNIE ATCHLEY.

Burr, Brace, and Ladder Combs.

Burr-combs are the fault of the bee-keeper, and not confined to a certain strain of bees. What I term "burr-combs," are those little burry or rugged combs built on top of the top-bars, and these can be dispensed with by not allowing too much space between the top-bars and cover, or upper story. The way most hives are made, the top-bars do not come up even with the top of the hive by ⅛ inch; this I know is intended to protect the bees from being mashed when the cover is placed on, and when a quilt is laid over the frames the bees begin to build a little comb up against the quilt, and it gives way, or is pushed up by the bees, and the burr-combs follow until the quilt reaches the cover, and a great lot of ugly burrs is the result.

I have my top-bars to come up within ⅛ inch of the top of the hives, and a quilt laid on. No bees are killed to amount to anything, and no burr-combs.

Then we sometimes have what we call "brace-combs." I find these more common where the frames are spaced a little too wide, and the top-bars too narrow. If the spacing is about 1⅜ inches from center to center, and the top-bars full ⅞ to 1 inch wide, we do not have many brace-combs.

Then we have what we term "ladder-combs." These we find often where the frames are too high from the bottom-boars, or where the bottom-bars do not go low enough down. The bees build knots or ladder-combs to assist them in reaching the bottom-bars.

Then, again, we find these ladder-combs between the upper and lower stories, where the top-bars of the bottom part and the bottom-bars of the top part are too far apart. A little less than ⅜ of an inch space is one that suits me between stories under bottom-bars, etc., and but few knotty combs are found when so arranged. A hive properly made to admit of only a little less than ⅜ of an inch spacing or openings, is the one that suits me best. When I was producing comb honey I used a space about 5/16 under the cases, and under all bottom-bars, and I seldom had any trouble with ladder combs. I am going to try one out-yard for honey this year, and will watch after this matter here, as different localities give different results. JENNIE ATCHLEY.

Introducing Drones and Workers.

We have found out by experiment that drones or workers are just about as hard to introduce to a colony of bees as a queen would be—I mean to a colony that has a laying queen. But a few workers or drones can be introduced by the candy plan to such colonies (those with laying queens) as queens to colonies just deprived of their queens.

JENNIE ATCHLEY.

Have You Read the wonderful Premium offer on page 350?

Starting Early Brood-Rearing.

Query 914.—1. Supposing the bees have more honey in the hive than they can consume, can brood-rearing be started earlier, or can it be increased by feeding?

2. If so, when is the best time to feed?

3. What is the most simple and easiest method?—Utah.

1. It would not pay.—A. J. COOK.

1. I have not experimented on this enough to know.—JAS. A. STONE.

1. In such cases it is useless to feed. Simply uncap an outside frame.—J. P. H. BROWN.

1. I would not be to the trouble of feeding if the bees had plenty of honey. —E. FRANCE.

1. Your conclusion is not necessarily dependent upon your premises, but such may be the case. 2 and 3. Bee-books will tell you.—J. H. LARRABEE.

1. If bees have more honey in the hive than they can consume, they will begin breeding as soon as it is best for them, and do not need any stimulating.—M. MAHIN.

If the bees have plenty of honey I should not feed them. This extra early brood-rearing is a disadvantage, generally, rather than an advantage.—G. M. DOOLITTLE.

1. I think so. 2. Long enough before the honey harvest to secure an army of workers to gather it. 3. Use an entrance feeder, and feed only a little each evening.—EUGENE SECOR.

1. Shave off cappings, and leave the combs in the hive, as the best means of stimulation. 2. In early spring, as soon as the bees begin to fly freely. 3. See answer to No. 1 above.—J. E. POND.

1. Sometimes. 2. Only after brood-rearing has started, and there's good weather to gather, but nothing in the fields to be gathered. 3. There are different ways. Thinned feed with a good feeder is one way.—C. C. MILLER.

1. It can be, to both, but it may not be desirable. If spring feeding is meant, I would not feed. 3. Place combs of sealed honey in the hive after having broken some of the cappings.—A. B. MASON.

1. Yes. 2. That depends upon the locality. In Central Illinois, if there is a dearth of honey in the interim between fruit-bloom and white clover. 3. The "simple and easiest" is in the open air, feeding always in the same place.—MRS. L. HARRISON.

1. The more honey they have, the better they will breed; but feeding will still increase their laying. 2. Feed but little at a time, and *not* before warm days, when they can fly. 3. We use the Hill can-feeders over the cluster.—DADANT & SON.

1. Yes, earlier and somewhat increased, but I do not think it profitable with us. In some localities, where there is a lack of early honey and pollen, it may be different. 2 and 3. I have not had enough experience to answer these. —P. H. ELWOOD.

1. Speaking from experience, I have no hesitation in saying, no! I do not mean by this that a colony of bees cannot be *forced* to breed by feeding *thinned* honey, but I mean to say that bees need no *forcing* if they have plenty of stores. —G. W. DEMAREE.

1. Under certain conditions you can start them, but when they have plenty of honey in the hive, they will attend to brood-rearing in time. 2 and 3. When I do feed in the spring, I use an outside feeder, fitting the entrance so that no outside bees can enter the feeder.—H. D. CUTTING.

1. I think it can be increased to some extent. 2. The best and only time to feed for this purpose is on the advent of weather warm enough for bees to fly freely nearly every day, at times when they are gathering little or no nectar. 3. By using a cheap open feeder, at the entrance.—R. L. TAYLOR.

1. Yes, but if they have plenty, I do not believe it is profitable to feed. 2. If feeding is done, the best time is about a month before the harvest begins. 3. Feeding out-of-doors. This is not practicable if there are many other bees in your neighborhood, but it is by far the best and easiest when it can be done.—JAMES A. GREEN.

1. Brood-rearing can, no doubt, be accelerated by feeding, but with plenty of honey in the hive, I should let Nature take her course. If I did anything, I

would cut the cappings on the outside combs, and let the bees carry the honey and place it in the combs around the brood. 2. The best time to feed is when the weather is warm enough for the bees to fly every day. 3. I prefer a couple of oval wooden butter-dishes that can be bought for about one cent each.—EMERSON T. ABBOTT.

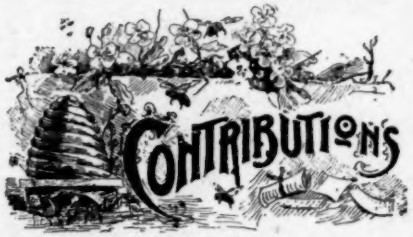
1. I think brood can be stimulated by judicial feeding, though the bees have abundance of stores. 2. Feed in the evening when the weather is good. Early feeding in spring had better be done at the top of the hive. 3. A tin can with a hole in its bottom, through which is placed a wire nail.—C. H. DIBBERN.

1. If bees have more honey than they *can* consume, I consider it surplus and remove it. You can uncap honey and it will stimulate the bees as well as feeding. 2. The best time to stimulate is when warm weather has come. 3. The most simple and easiest way that I have found to feed is to give frames of honey, or sugar syrup, at nightfall.—MRS. JENNIE ATCHLEY.

1. Where a colony has plenty of stores and are moderately strong, they will do quite well to be left to feed themselves. I am firmly of the belief that they will increase some faster if fed in the open air. 2. The best time would be when the season is far enough advanced so that bees can fly with safety, and are of their own accord commencing to rear brood. 3. If you are feeding comb honey, uncap and hang in the hives, spreading well where it is easily accessible to the bees. If extracted, put in shallow dishes—hive-covers will do if tight; put in floats to keep the bees from getting drowned or daubed.—S. I. FREEBORN.

1. Plenty of honey in the hive is certainly a favorable condition for early brood-rearing. 2. Commence about the last of March. 3. Bruise the cappings of the sealed honey. Utilize the partially filled combs, etc., left over last fall; or pour in the syrup upon the cluster and combs. This answer has reference to the climate of Utah. In more Northern States, it is a question with me if it is advisable to induce early brood-rearing. Another point—if the feeding is overdone, the bees will fill up the cells and retard the very object you seek. It also brings about a sort of abnormal excitement—some of the bees may leave the hive, and if the day is cold, "they will never come back." Go carefully.—WILL M. BARNUM.

1. There is no question about stimulative feeding in spring increasing the amount of brood reared even where the colony has plenty of stores. Still, protection has a great deal to do with the extent of brood-rearing, and the facts laid down in my book upon this subject are strictly correct. 2. The best time to feed is any time when the bees can fly. 3. Cutting's entrance feeder is the best for stimulative feeding, but if the stores are very short, I prefer the *butter-dish* feeders over the brood-frames, and give 3 pints at a time of thin syrup until about 9 pints are given. The feeders are enclosed in a rim made to fit the top of the hive, and 2½ inches deep. The cover of the hive is put over it. The narrow sliced-wood butter-dishes are best, but must be made water-tight at the ends with melted wax, using a short camel's-hair brush for the purpose.—G. L. TINKER.



Bee-Pasturage—Dependence of Success.

Written for the American Bee Journal

BY DR. J. P. H. BROWN.

When we take a retrospective glance at what bee-keeping was 50 years ago, and then follow it up to the present, no one can say that it has not made gigantic strides up the hill of science. Instead of the old log-gum and the straw skep, we have now movable frame hives which enable the bee-keeper to secure the honey, if he chooses, in nice, beautiful comb, or he can sling it out free from extraneous substances, by means of a machine. Experiment stations are now established not only to test the latest apiarian appliances, but to ascertain the most profitable application of apiarian skill and science.

The knowledge of the economy of the hive and the natural history of the honey-bee is far in advance of what it was half a century ago; in fact, it has attained a degree of thoroughness that

would seem to leave but little more to learn.

While all this is true, have the returns to the bee-keeper in surplus honey been commensurate with the progress made in implements for the apiary, and in their modes of application? Every bee-keeper of any extended observation and experience knows that this question can only be answered in the negative. Locations that formerly yielded large crops of honey give now only moderate returns, and very often chance years for that. Does the white clover, that is the "stand-by" with many bee-keepers, give as many certain yields of surplus as it did years ago?

The mellifluous trees and shrubs that abound in the swamps and along the water-courses of our Southern States, seem to fail of late years to produce those large honey crops that they did in past times. As every effect has its cause, the question naturally arises, what agencies have wrought these changes? No doubt in many cases the woodman's axe and the agriculturist's plow have curtailed the forage, but in other locations such has not been the case. We must look for other causes. I have nothing positive to offer towards the solution of these problems, and very much fear that no one else has. We all have the privilege to offer conjectures. A theory unsupported by facts is a "baseless fabric."

Pomologists of long experience tell us that there is more uncertainty in securing good yearly crops of fruit now than in former years. The causes they assign are (insects aside) meteorological and deprivation in the soil of certain elements necessary to the perfect development of the particular fruit. It may be one or both of these causes. Reasoning from analogy, I infer that these same causes that are recognized in the production of fruit, are the same that influence the secretion of nectar in the flowers. While the bee-keeper may not be able to control the atmospheric conditions bearing upon the secretion of honey, he may be able, by studying the thermal lines to his section of country, to select locations that are less subject to late frosts—that may be less affected by drouth than others, etc.

In the production of fruit we know that the character of the soil elements affect its development, its time of ripening, its color, and its flavor. The same cause no doubt affects the secretion of the nectaries of the flower.

It is to be hoped that our apiarian experiment stations and our bee-keeping scientists will take hold of this subject, and diligently prosecute it until some tangible results are obtained; for upon the abundance of the nectar secretion depends the amount of money in the bee-keeping industry. Dovetailed hives, sections, foundations, golden Italians, and the whole catalogue of apiarian supplies cannot make bee-keeping a pecuniary success without plenty of pasture that yields honey.

Augusta, Ga.

The Advantages of the "Handy Hive."

Written for the American Bee Journal

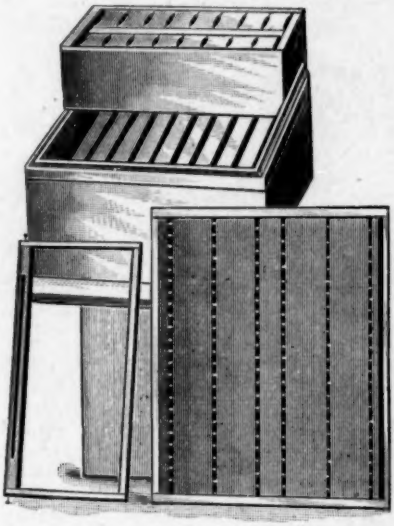
BY B. TAYLOR.

I see by the discussions in the bee-papers, that the question of the "ideal" hive is not yet settled; so I concluded that I would give the readers of the AMERICAN BEE JOURNAL a discription of the "Handy hive," that I have used continuously for more than 34 years, during which time I have given extended trial to nearly every hive presented for public approval; and now, as age is creeping on, and a glimpse of the country on the "other side of the range" comes in view, I begin to feel less like experimenting, and more in need of quiet rest.

The question of what hive is best for all practical purposes, in practical honey production, as a means of earning our bread with the least labor, presents itself for dissection, and the answer comes with a resistless force—the Handy hive.

This hive was the result of my first effort in inventing a hive. Early in my experience I realized the need of some means of holding the frames in the hive the proper distance apart, and at the same time leave them as movable, or more so, than the loose hanging frame; and I began experiments to that end. I invented the wire end frames, as now

used in the Handy hive, and so perfect are they in practice that I have never been able to add the slightest improvement. As being in the fullest sense a frame with fixed distances, and which a blind man can use, and get each frame in its exact place, and yet remove any single frame from any part of the hive without disturbing the other frames, far easier than the common hanging frame.



These frames are always the exact distance apart (1⅜ inches) at both top and bottom, when in position. The top of the frame is kept in place by the wire ends of the frame resting in a shallow notch in the edge of the tin rabbet, and the bottom is held by suitable wire staples driven into the ends of the hive-body. These frames are plain and easy to make, the wire ends being 6 penny wire nails driven into the top ends of the frame.

The hives are cheap and simple to make, and have no loose parts, and may be tiered to any hight for extracting, and the proper bee-spaces (¼ inch) always be maintained. Any style of super may be used for comb honey; for extracted, the same combs as used for the brood-nest, thus avoiding extra-sized extracting combs.

It is right to record a good thing, and in this spirit I recommend the Handy hive. I do not recommend it because I invented it. I commend it because after 25 years' experience with it on a large scale, and in competition with all the best hives in use, I know it to be the handiest and most profitable hive in use, for either the keeper of a few colonies, or the professional apiarist who numbers his hives by the hundred. Both fixed frames and the old well-tried hanging frames have each their special merit. The frames used in the Handy hive combine all the good qualities of both fixed and loose hanging frames, and without the bad features of either; for while they are in the true sense a fixed frame, they are far more movable than even the hanging frames.

The slotted top-bar used in these frames is of great value, as with it the tops of the frames always keep entirely straight. This keeps the bee-space between the brood-nest and supers always right, which almost entirely prevents that great nuisance, burr-comb, while it entirely abolishes the necessity for a slatted honey-board. The Handy hive is perfect for either comb or extracted honey, and I warrant that no bee-keepers will be led astray by adopting it, as they frequently are, by buying new and highly-praised hives.

The top-bars ere slotted (see illustration), which entirely prevents sagging; the weight of the combs being supported by the lower half of the top-bar, the upper part always remaining straight, thus always keeping just a bee-space between the brood-frame and supers, or between two or more hive-bodies for extracting. This almost entirely prevents that great annoyance, burr-comb. I also assert from actual experience that these double top-bars, as used in this hive, render slatted honey-boards entirely unnecessary. What I term "lateral movement," so desirable in handling frames, and which played so important a part in giving the hanging frames their great reputation, and lacking in all other fixed frames that have as yet made their appearance, is most complete in the double top-bar wire-end frames. You can instantly separate two frames in any part of the hive without loosening any wedges, screws or other traps to make room to get out the first frame; or you can take out any frame without moving or disturbing the others. Yet each frame has a special place in which to rest, and from which they can be more easily removed, than even the old suspended Langstroth frame. And finally, they are as cheap as any other good frame, and combine all the good points of both suspended and fixed frames, with none of their faults.

This hive is precisely like my very shallow double brood-chamber hive that has been mentioned in the bee-papers,

except that the frames in the very shallow hives are what they call "Hoffman frames" now. But as I first made these frames 30 years ago, I think I may be excused for claiming that I did not copy from the Hoffman frame.

If the Handy hive had been pushed as Root's Simplicity has, the land would today be filled with them, and no one would regret having adopted it, as they have maintained the confidence of all who have tried them, through the third of a century's practical trial in comparison with all the hives in use.

Dividing Colonies for Increase.

Written for the American Bee Journal

BY J. W. SOUTHWOOD.

Query 908 asks which is better in dividing, "to leave the old queen in the old hive, or remove her into the new," and the time to divide.

The answers appear not to harmonize. Some say leave the old queen in the old hive; others say move her into the new. Some say when the hive is full of bees and brood, others say about natural swarming time; and still others say, let them divide themselves.

Answers to the above queries are greatly modified by existing conditions, which, no doubt, accounts in some degree for the difference of the answers given. While I am an advocate of natural swarming in general, I am also a believer, under certain conditions, in dividing. One condition, which occurred in my apiary last season, led me to divide. A large swarm issued, led by a queen whose wing was clipped; they did not settle, and was returning to the hive before noticed. I caged the queen, and removed the old hive to a new location, placed the new hive on the old location, took a frame from the old hive, examined it to see that it contained no queen-cells, placed it in the new hive, filled up with frames of foundation, released the queen in the new hive, shook a few bees from the frames of the old hive which mostly returned to the new hive, and the field-bees returned to the old location and entered the new hive, making that colony the stronger of the two, and containing the most of the workers, and gave good results. In a day or two I returned the frame of brood to the old hive.

The hive was so full of bees before they swarmed, that I gave them a case of sections, more for the purpose of giving more room than anything else, as it was early, and I desired to keep back the swarm so as to increase its size.

Under such and similar conditions I would divide. And when, as in this case, the conditions are favorable, the queen easily found near the entrance of the hive, I would place her in the new hive, as my preference, as there is where the natural swarm puts her. But under different conditions I would leave her in the old hive.

To illustrate, I will give a case in which I divided a colony last season for a neighbor. They did not seem as though they would swarm until late. I went once, at their request, but did not find enough bees, so I told them unless they bred up to a hive full in a few days, I thought best not to divide; but on returning in a few days, I found conditions favorable, so I proceeded to divide. They were black bees, and would hang in great bunches, so I only looked a few moments for the queen, intending to place her in the new hive, but failing to find her, I looked over the combs, found those containing the best looking queen-cells, and also that they did not contain the old queen. I placed all but three in the new hive, and placed it on the old location, removed the queen-cells from the remaining combs, returned them to the old hive, and gave them a new location. The result was good.

I think now I would, in a case like the last, give all, or all but one frame to the new hive, and give it the new location, and leave the old queen and old hive on the old location, as they would then get the field-bees, which I think would give better results.

I have only given two conditions in which I would divide, and one where I would place the queen in the new hive, and one where I would leave her in the old hive. These are only a few, but other conditions may exist in which I would divide. Study well the nature of bees, and then act according as conditions modify.

Monument City, Ind.

Where Honey Comes From.

Delivered at the Ontario, Canada, Convention.

BY R. M'KNIGHT.

I may say it is rather a trying ordeal for a man to face an audience and attempt to interest or instruct it in these days when "the school-master is abroad" in such numbers. A few days before I

left home I received a card from the Secretary, saying I had been selected to say something by way of filling up the program on one of the evenings during the session of this Association. The circumstances were such that I had no time or opportunity to make preparation to do so, or even to think of or fix upon a topic.

On mentioning my dilemma to our President, Mr. Gemmill, to-day, he generously came to my rescue and suggested "Honey" as a good subject to treat on such an occasion. I am very grateful to him for thus furnishing me with a "text." It is a very common-place one to treat before an audience of bee-keepers—an audience composed of the brains and matured experience of the class to which they belong in this Province. Still, the topic has something in it we don't all understand, and by the way of demonstrating this, I ask Mr. Blank, down there in the audience, "What is honey?" Mr. Blank pauses awhile and replies, "Why, honey is honey,—everybody knows what honey is." "Your answer to the question is a very unsatisfactory one, sir; I will furnish you with a better definition, but one you may not find in the dictionaries, it is one, however, that suits me well enough. Honey is a translucent saccharine syrup that all children and most grown-up people are fond of."

Now, Mr. Blank, No. 2, "Where do we get honey?" Your answer is, "We get it in bee-hives." "And how came it in the bee-hives?" "The bees collected and stored it there." "Good; and where did the bees get it?" "In the flowers, of course." 'Aye, and where did the flowers get it?" Now you hesitate; that is evidently a "poser." Well, it is the consideration of the last question I propose discussing for a few minutes this evening.

I set out with the assertion that the atmosphere is the source whence our honey is derived and I say further, that the substance of every green thing on the earth's surface—from the tiny plant to the monarch of the forest is *mainly* derived from the same etement. Science has clearly demonstrated this fact. It is a fact that is easily demonstrated, too. Fell a tree and burn it up, the ashes that remain represent just what of its substance comes from the soil, the rest is driven off and mingled with the air. It is another instance of "dust to dust" and the balance to the source from whence it came.

To understand how honey, and plants and trees from which it is collected, have their origin in the atmosphere, we must know something of the composition of the atmosphere, and the nature of plant life. Here let me say that one of the advantages of bee-keeping is, that the prosecution of it leads intelligent, observant people into channels of thought they would not otherwise enter upon. To understand it fully, the domain of science must be pretty well cultivated. Hence the bee-keeper of an enquiring mind finds in it ample scope for the exercise of his talents, and usually becomes an enthusiast in the business.

The constituents of the atmosphere, in the main, are no longer a secret. Every school-boy knows that they consist, in the main, of oxygen and nitrogen, but there are other elements as well, one of which is carbonic acid. This is the source from whence we derive our honey. It is the source, too, that nourishes and builds up the plants and trees that secrete honey. The proportion of carbonic acid in the atmosphere is comparatively small, being only about four-tenths of one per cent. of its volume. Yet this fraction is quite enough to supply the wants of the vegetable world. It has been estimated that there are 28 tons of carbon in the atmosphere that overhangs each acre on the earth's surface. As less than a third of the earth's surface is covered by vegetation, and as the atmosphere is ever in motion from place to place, and as the loss of carbonic acid through its appropriation by living plants is ever being given back to it through the decomposition of vegetable matter, there is and will continue to be in the atmosphere, ample of carbon to supply the ever-recurring wants of the vegetable kingdom. Hence we may look forward to an annual honey crop while the vegetable kingdom remains as now constituted; not always uniform, however.

It remains for me now to outline how living plants elaborate honey from the carbon of the atmosphere. We can only understand this by knowing something of structural and physical botany. We will select a tree for our purpose, because it appeals more forcibly to our senses than a tiny plant. What then is a tree? I answer, it is at once a living and a dead thing. Every particle of matured wood in its trunk and branches is dead matter. It is death preserved from decay by its environments. It has in it no power to aid in the further nourishment or development of the tree. The leaves, the bark (especially the inner bark) and the sapwood alone are alive, and in these the work of nourishment and development are carried on.

It is in the leaves especially, that the elaboration of suitable food for the plant or tree is carried on.

We ought, therefore, to know something of the structure of a leaf in order to understand our subject; but time forbids a close investigation of it; suffice it to say that its pores and cells are what we are more particularly concerned with—the cells especially—because it is in the cells honey is elaborated. The epidermis or outer skin of a leaf is closely studded with pores, these pores range in number from 800 to 170,000 to the square inch of surface, and it is through these pores the carbon of the atmosphere is absorbed and received into the cells, where it is worked into honey. Cells also abound in the inner bark of the branch and stem, they are especially active in the interposed *Cambum-layer* lying between the newest strata of wood and bark. These are annually renewed and maintain a living communication between the rootlets on the one hand and the foliage on the other. These cells—wherever found—contain protoplasm, which has definite relations with neighboring cells, and with the outlying carbon of the atmosphere. Protoplasm is the active, working, living matter of the plant or tree.

When the carbonic acid of the atmosphere is received into the protoplasmic cells of the leaves of plants and trees it undergoes three changes before it is fitted for cell building. It is first converted into starch—the basis of honey—then into sugar, or honey if you like, afterwards into cellulose, which is fully elaborated plant food. Every green plant contains starch, therefore every living plant has in it the basis of honey. Who then will dogmatically assert what are and what are not honey-producing plants? But this is not germain to my topic.

I have said when the carbon of the atmosphere is absorbed by the living plant it is first transformed into starch through the agency of protoplasm and leaf-green, and then into sugar. We stop at this stage of the elaboration of plant food because it is then, and then only, we get our honey, and we get it in greater or less quantities in proportion to the reserved store of starch. If plants had no power to store up more starch than is necessary for their immediate wants, we would have no abnormal honey-flows. But they have the power to store up more of this article than they can work into tissue, and do so occasionally. It is under these circumstances we get the big honey crops, if we have the working force to collect it.

The excess of food over the requirements of the plant is, while in the sugar stage, determined by the flower, or oozes through the pores of the leaf, flowing over its surface. The former is called "nectar" and the latter "honey-dew." They are substantially one and the same thing—the main difference existing in the fact that that in the flower absorbs a portion of its essential oil which gives to the nectar its aroma, hence the expert can readily tell the class of flowers from which honey has been collected. Honey-dew is destitute of this aroma, but is just as healthful and nutritious as that collected from the flowers. Perhaps some of you will be ready to hold up your hands in holy horror at the promulgation of this theory, and be ready to declare me as great a heretic as those who are by some believed to be who gave to the world the pollen theory, the trowelsting theory and the sugar-honey theory. I am content to be so considered if you can disprove the statement.

Understand me, by honey-dew I do not mean the vile stuff, vulgarly denominated "bug-juice." That is a different thing. When honey-dew is present it is frequently devoured in large quantities by the little insect you are familiar with. The little "beastie" is a glutton of the worst kind and devours a great deal more than it can assimilate. The excess is voided in the form of excreta. This is "bug-juice" pure and simple, and not honey-dew. We are often deprived of a good crop by the presence of these creatures, and the fact that their voidings co-mingle with what would otherwise be a pure, healthy article of food.

I thank you, ladies and gentlemen, for the attentive hearing you have accorded me while giving expression to the few crude remarks I have been able to offer in the short time allotted me. Before taking my seat I desire to thank Mr. Pringle, because it is to him indirectly I am indebted for what I know of the subject. It came about in this way: A few years ago when he was President of this Association, he asked me to prepare an essay to be read at our then coming meeting, on the "Honey-producing plants of Ontario." In acceding to his request, I was led to look into a branch of natural science, from the study of which I have since derived much enjoyment.

Owen Sound, Ont.

Visit the World's Fair for only 35 cents. See page 325.

Description of a Bee-House, Etc.

Written for the American Bee Journal

BY ANDREW M. THOMPSON.

On page 409 (1893) I promised a description of my bee-house made in the fall of 1892. The dimensions on the ground are 14x20 feet; the studding are sawed 2x10 inches, and 12 feet long. These studding were slit when sawed nearly half way, leaving 6 inches for the upper story, and in framing these studding the 4 inches were sawed off to the saw kerf, leaving 6 inches above and 10 below to be filled with sawdust. The upper joice were 2x10 inches, and 14 feet long. The space between the ceiling overhead and the floor in the upper story was filled in the same way.

The outside is boarded with rough hemlock lumber, and the cracks were battened. The lower story was sheeted upon the inside, and the cracks were battened between the studding on the inside, and filled with sawdust to the ceiling. The upper story was sheeted in the same manner below, and also filled with sawdust to the roof, leaving one door in the lower story to move the bees in and out, and also a trap door in one corner to ventilate the bees in winter, and also to go down from the upper story so that I can see to my bees at any time during the winter months. There is one window and a door in the upper story, and entered by stairs on the outside, leading from the ground.

I put in on Nov. 24, 1892, 65 colonies of my own, all in good condition except two which were light with bees, from the effects of being queenless, but with plenty of stores. The mercury stood at 44° until March, when it raised to 50°. A neighbor of mine had 18 colonies—11 in frame hives and 7 in the old-fashion box-hive. The 11 he put into my bee-house on Nov. 24th, and the others were left at home on the summer stands.

I put my bees on the summer stands on April 8, 1893, with a loss of one of those light colonies, which had diarrhea. The 11 belonging to my neighbor all came through O. K., and the 7 left on the summer stands all died.

Bees that were wintered out-of-doors in this locality in the winter of 1892-93 nearly all died, one man losing 100 out of an apiary of 109.

The winter in this section was mild until the last few weeks. We have had a taste of those good old-fashioned winters we used to have when we were boys.

The honey crop in this section was poor last season, there being no honey after June 20th or July 1st; colonies starved out, leaving food and hive—a case I never saw since I have kept bees. There were two colonies came from my neighbors and alighted on the balsams in my apiary.

The honey we had was very nice, being Alsike and white clover, there being no timber in this section. I have 89 colonies in my bee-house this winter, all in fine condition.

Canaseraga, N. Y., Feb. 14, 1894.

The So-Called Mistakes of Darwin.

Written for the American Bee Journal

BY CHAS. DADANT.

Although I am very little competent in the matter, I desire to redress the ideas of Mr. Templin on the teachings of Darwin, as given on page 215.

Mr. Templin quotes Darwin, who wrote:

"All vertebrate animals, all insects, and some other large animals, pair for each birth." Then he adds: "As I understand it, every egg that is laid and hatched is a birth. If this is correct, it is evident that Mr. Darwin is away from the truth, for every intelligent person knows that bees, wasps, and some other insects do not pair for each birth."

So it is on the meaning of the word birth that the criticisms of Mr. Templin rely. If we open the Webster dictionary at the word birth, we find:

"4. Birth is the act of bringing forth; as, 'she had two children at a birth.'—(Milton.)"

"8. That which is produced, whether animal or vegetable: 'Other hatch their eggs and send the birth till it is able to shift for itself.'—(Addison.)"

So it is certain that Darwin was not so void of common-sense as to suppose that every one of the 2,000 eggs laid by a queen-bee every day for months, had to be impregnated by as many copulations.

Darwin was not a bee-keeper; therefore it is not astonishing that he did know neither the parthenogenesis nor the ways used by bees to build combs. But in writing on these matters, he is far from being positive, for he says about the building of combs, "That the work of construction *seems* to be a sort of balance struck between many bees, all standing instinctively at the same

relative distance from each other," etc.; and on the parthenogenesis he writes that "*it is a curious exception not well understood.*"

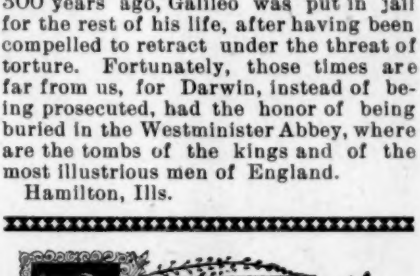
When Darwin wrote his book on the "Origin of Species," in 1859, the theory of Dzierzon, on the parthenogenesis of bees, was yet in its infancy, and was not accepted by all the bee-keepers; so it is but natural that Darwin did not understand it; for the most learned men cannot be acquainted with every kind of knowledge. So the criticisms of Mr. Templin, if investigated, are reduced to nothing, and cannot prove, as he suggests it, that it is better to use one's brains and eyes than to be blindly led by a great name. Such a suggestion, if practically applied to science, would lead us to a complete negation of most of the greatest discoveries.

The ideas put forth by Darwin on evolution, are now admitted as true by all the savants of Europe and America. They are so rational, so much sustained by recent discoveries, that they cannot be any more contested.

I was about 18 years old when, nearly 60 years ago, I saw, in a humorous paper of Paris, *Le Charivari*, an engraved criticism of the book of Lamark, who was one of the first discoverers of evolution. That journal showed an oyster which, by several progressive changes, had become a frog, and that frog, by other successive evolutions, was changed into man. As I had already noticed the relationship of the fishes with the mammiferous animals, by thinking of the whales, which nurse their cubs as do cows, and which have lungs instead of gills; as I had noticed also that frogs breathe water when young, and air when more aged, I was prepared to admit the theory of Lamark; so I procured his book, studied it, and became more and more convinced of the rationality of his ideas.

This theory, after a sleeping of 40 years, a result of the incapacity of Lamark to continue his researches (for he was struck with blindness, caused by small-pox, during the last 17 years of his life)—this sleeping being the consequence also of the opposition of Cuvier, who was then at the head of progress on natural history, and who contended that the animals were created by spontaneous generation—meaning that, in a country where no horse existed, a horse and his female could be spontaneously created to fill the need; and that, in another country, where insects were missing to help the fertilization of flowers, a queen-bee, with her drones and workers, would be created to dwell in a hollow tree, etc.; after such a delay, and in spite of the works of some other partisans of the doctrine of evolution, the truth of the ideas of Lamark was confirmed by the studies of Darwin, and by thousands on thousands of discoveries, which have placed this theory among the scientific facts, which cannot be any more questioned than the revolving of the earth; for the publication of which, less than 300 years ago, Galileo was put in jail for the rest of his life, after having been compelled to retract under the threat of torture. Fortunately, those times are far from us, for Darwin, instead of being prosecuted, had the honor of being buried in the Westminister Abbey, where are the tombs of the kings and of the most illustrious men of England.

Hamilton, Ills.



The Vermont State Convention.

Written for the American Bee Journal

BY H. W. SCOTT.

The 19th annual convention of the Vermont Bee-Keepers' Association was held in Burlington, Vt., on Jan. 24, 1894; Pres. W. G. Larrabee in the chair.

After prayer by H. L. Leonard, T. H. Wheatley was elected Secretary *pro tem.* The forenoon was devoted to the appointment of committees and the receiving of new members and the annual dues.

The afternoon session opened with a large attendance. The minutes of the last annual meeting were read and approved. The roll call showed 25 members present. The report of the Secretary showed an enrollment of six new members since the last meeting; and that of the Treasurer, a small balance in his hands.

The address of the President followed. He congratulated the Vermont bee-keepers on their successes during the past season; and in his report of the North

American meeting in Chicago last October, he compared the Vermont products of the bees with those seen on exhibition there, with the comparison in no way unfavorable to the Vermont side.

THE NEW BEE-EXPERIMENT STATION.

The next topic, "Experimental work; what has been done at the State farm?" was most ably discussed by O. J. Lowrey and T. H. Wheatley, and it was *the* topic of the meeting. The trials and the work of the committee in getting the appropriation were graphically told. The success, and the work since accomplished, marks an epoch in the history of apiculture in Vermont.

Mr. C. W. Fisher is a student at the University of Vermont, and is the man who will have the work to do in the experiments to be conducted. He is a bright, young student, and very much interested in apiculture. The bees were fed some for winter stores, and in speaking of the feed, Mr. Fisher said he added some vinegar. This statement raised a storm of questions and answers thereto.

E. J. Smith—I always use vinegar to prevent granulation. One table-spoonful to a pound of sugar.

J. E. Crane—I find some things peculiar in feeding. I think bees have the power to add acid. I have fed hundreds of pounds of sugar syrup without adding any acid, and without having any granulation.

M. F. Cram—Has any one ever used cream of tartar?

H. L. Leonard—I have, but I noticed no effect.

E. J. Smith—I think the bees do change sugar syrup.

At this point a committee of three were elected to take charge of experiments, to receive suggestions and recommendations, and to present the same to the board of control; and to have general advisory supervision of all experimental work.

Committee—M. F. Cram, O. L. Lowrey and the Secretary of the Association.

REPORTS FOR THE SEASON OF 1893.

At this point the reports of the members were given; and they showed an increase from 1,883 colonies, spring count, to 2,291, fall count; with a honey crop of 57,863 pounds of comb, and 1,550 pounds of extracted honey. This report is probably not over one-half of the total for the State. The winter losses in the winter of 1892-93 were light.

The question-box was next opened.

STIMULATIVE SPRING FEEDING.

"Is stimulative feeding in spring desirable?"

O. J. Lowrey—Some years it is, others it is not. For stimulative feeding use thin honey, and feed about one-half pound each day. Sugar syrup is cheaper, but honey is far the best.

J. E. Crane—I had considerable experience with honey-dew, and found that it answered very well to feed with in the spring.

L. O. Thompson—I fed 2,000 pounds for stimulative feeding, and thought it better than sugar syrup.

QUALITIES OF A SUCCESSFUL APIARIST.

"What are the essential qualities for making a successful bee-keeper?"

J. E. Crane—Pluck!

Others—Keen judgment, work, study, perseverance.

VALUE OF BEE-ESCAPES.

"What is the value of bee-escapes?"

O. J. Lowrey—I have used the "Larrabee" and the "Porter." I have found the escape very good in clearing sections of bees. I have had the Porter clear the sections, on a crowded hive, in 24 hours.

W. G. Larrabee—I have used the same kinds. I think they are a great preventive of robbing. For extracted honey they are indispensable.

J. E. Crane—I use a Crane smoker in driving the bees out of the way.

E. J. Smith—I pile my honey in the bee-house, and let the bees out at the window.

BEGINNERS AND THE HONEY-MARKET.

"How can beginners be educated so as not to ruin a market for those of more experience?"

M. F. Cram—The trouble usually cures itself; they learn better, or die a natural death.

FUEL FOR BEE-SMOKERS.

J. E. Crane—I have been astonished at what can be done by using for smoker fuel, propolized cloths. I have worked in September, where the robber bees were plenty, estimating stores, with no protection except my smoker. I regard propolized cloths for smoker fuel to be the greatest improvement of the last few years. I suppose their efficiency to be due o a volatile oil or gas

which comes from the burning of propolis.

V. V. Blackmer—I have had the same experience as Friend Crane.

E. J. Smith—I used some section pieces covered with propolis, but did not see as the smoke prevented robbing.

EVENING SESSION—JAN. 24TH.

Owing to illness in his family, H. P. Langdon was unable to be present, and the hour was occupied by J. E. Crane, with a very valuable essay on the use of bees in the fertilization of flowers. The essay showed much study of the subject, and was well written.

VENTILATION OF HIVES.

V. V. Blackmer—I hope the convention will not pass by this article of the programme entirely. I have much interest in the subject of ventilation. I have tried all ways, from entire top of hive open to entire top sealed, and find that the bees average best where we turn back the enamel cloth about one-third way across the ends of the frames, at the front of the hive.

O. J. Lowrey—I have tried both ways, and prefer cloth turned back across the ends of the frames.

H. L. Leonard—It is an important subject, either in cellar or for out-door wintering. I have tried cobs, woolen cloths; cloths over a part, honey-board over the other part, and various other processes; and I find that my bees do best with a little chamber above the brood-frames, and some upward ventilation. I desire a location sheltered from all cold winds.

J. E. Crane—I think the hanging of a carpet in front of the entrances of the "Bristol hive" advantageous. The portico to these hives acts as a funnel to concentrate the wind and direct it into the hive. I prefer planer shavings for packing above bees. Forest leaves work admirably. In packing in the fall, regulate the size of the brood-chamber to the size of the colony. It is bad to put a small colony of bees into a large hive, and *vice versa*—a large colony into a small hive.

SPRING PROTECTION OF BEES.

"Is spring protection necessary after bees are put out of the cellar?"

M. F. Cram—This is a question that can be answered by yes or no, and still be answered correctly. The last two seasons I have put my bees out on the 8th and 9th days of May, and in 30 days they were in the sections at work. My apiary is protected by hills; and the bees have water within 15 feet. I would protect it if it was not done by natural surroundings. My location is at a very high altitude. I winter my bees in the cellar in a room 9 feet square; and have not lost 3 per cent. for the last five years. I now have 73 colonies in the cellar; and I keep the temperature as near 45°, Fahr., as possible. The hive-entrance is open as in summer, with no top ventilation.

H. L. Leonard—I have wintered bees in as many as 10 different cellars. I find that they vary much. Bees begin to rear brood in January, and, if they are wintering well, continue, otherwise they cease about March.

V. V. Blackmer—I have used the Langstroth frame entirely until last spring, when I bought some bees in Bristol hives, and I think I like that frame better. The bees have some honey *above* the cluster instead of at one end.

SHALLOW FRAMES AND HIVES.

"Advantages and disadvantages of shallow frames."

O. J. Lowrey—I find half-depth frames very handy, and think I shall use more in the future.

H. L. Leonard—A shallow-frame hive has capabilities that but few see. It is a very good hive to have around the apiary.

But few had used the shallow-frame hives, and no one sufficiently to speak of them with any degree of certainty.

BEE-PASTURAGE—SUPERSEDING.

"Is it advisable to sow buckwheat or anything for the bees to work upon?"

J. E. Crane—It is a very doubtful policy. I prefer to have my neighbors do the sowing. Alsike clover is good, but I think its value as a honey-plant has been highly over-estimated.

"Are bees more apt to supersede their queen if its wings are clipped?"

H. W. Scott—I never have been able to detect the slightest difference, provided the queen was all right in other respects.

PARTLY-FILLED SECTIONS.

"Can partly-filled sections be used again with profit?"

Yes, if the sections are clean; if not, no. Cut back the comb and use them as bait, either in the center of the case or at each end.

(Concluded next week.)

☞ Do not write anything for publication on the same sheet of paper with business matters, unless it can be torn apart without interfering with either part of the letter.

The "Water Route" for Skunks.

As it seems in order to devise some odorless way to catch skunks, I would suggest that Mrs. Atchley plant a barrel level with the ground, and partly fill it with water. Then fasten some dainty morsel on a cover that will tip from the center. His skunkship will soon take the "water route" if he decides to nibble; and the self-adjusting lid leaves the way clear for another to follow. A. B. BAIRD.

Belle Vernon, Pa.

Had Deep Snow in Kansas.

Our winter was very nice until about Jan. 24th, when there was a very cold snap which lasted four days; about Feb. 11th it snowed hard all day, and the high wind drifted the snow badly, so that bees on the summer stands had to be dug out after several days. Drifts 6 to 8 feet deep were not uncommon. The snow was 8 inches to a foot deep on the level. This winter had been splendid for every day flights up to the middle of January. Last fall we had a good honey season, and the bees on the summer stands have wintered well.

F. M. HOGAN.

Elk Falls, Kans., Feb. 22.

Roburs 'nd Robin'.

Eye wuz lukin' at mi be-yord too da, and with sirprize saw won of my best hives wuz gon. It had disapered. i got mi be buk 2 se wat eye kud due. furst aye luked in Mistur Rute's "Abe See," and sene the heding, "how too tel wer the roburs belong." It says: "iff yew or a be huntur & etc." now, that dident doo mee mutch gud, bekause i wos know be hutur; sumbodi was huntun mi bese.

Then i sene anuthur heding—"howe 2 stop roburs," & etc. mi stors! says i, if i hat a gun I wood a stoped them roburs.

Anuther heding says, "wat hapins if robing is knot stoped." Now enybodi nose that,. Aye doant c wat hee says that far, kause we awl know if wee doant stoppem, they goe off with the hole shutenmatch.

Still a litle firther on Mr. rute says, undur anuther heding, "wurking with bese buy lamplite, wen roburs or trubelsum during the da." now, they wasent eny robers around hear inn the da, and i no they dident have know lamplite at nite; they dun the wurk by darck. hoo kan tel me wat too due? i am tyred; sow i aint a going too fule with that subjeckt enymohr tunite.

if aye wood a had Mister Rute's "Abe See" buk, i woodent made know mistake, wen i sewed mi bockweat a felow toled me too sew it inn the darck of the mune, and we like a fule sowed it inn the ground. Well, hearaftur I wish me gud luck.

IMA SPELLUR.

Grammer Mills, Indyana.

P. S.—i thot i fargot too tel yew about sewin' bockweat, butt up on reeding ovur mi letur, i. c. i. didunt. I. S.

A Bee-Keeper's Ear-Muff.

It seems absurd to think of taking precaution against bees getting into one's ears, but I can easily imagine that if one should once make an entrance there I should always be in terror afterward when one buzzed about my head.

A few years ago ear-muffs were quite fashionable in this part of the country to protect the ears in winter. As nearly as I can now tell, they were made of cloth so as to cover the entire ear, a piece of wire being sewed around the opening, so that when the ear was crowded into the muff, the wire was small enough to hold it on. Of course there was plenty of room in the muff so the ear was not crowded after it was in, only as it was crowded through the wire. Some of them had a piece of wire-cloth opposite the orifice of the ear, so as not to interfere with the hearing. Something in this line might answer the query of J. H. Andre, on page 59.

Marengo, Ill. C. C. MILLER.

Package for Extracted Honey, Etc.

I have "caught on" to a good package for extracted honey that does better for my home market than anything I have ever seen. It is a cheap wooden pail, made for candy or jelly, not painted on the inside, but I wax it with white *wax* on the inside; it is already painted on the outside. It has a bail and cover, and will hold 10 to 15 pounds. It costs, at the factory in Keene, N. H., $1.00 per dozen. I fill the pail with honey, put on an oiled paper, and nail on the cover slightly, and it will keep very nicely for years, as well as a shorter time. It seems to be an attractive package invariably.

When showing one on the road, or in a house where they like honey, and have money to pay, I seldom fail to sell. I sell white at 12½ cents, and amber at 10 cents, and call the pail the same as a pound of honey. They weigh about 1½ pounds each. I get the lard pails for $1.20 per dozen, and they hold 25 pounds each, which I prepare in the same way, but they do not sell as well as the smaller sizes. The 25-pound pails weigh 2 pounds each. Now, in view

of the low price of extracted honey in the market, my plan seems to be the best way to dispose of what I produce.

My crop last year was 3,600 pounds of extracted, and 2,000 pounds of comb honey; besides capped brood-combs for feeding in the spring, 2,000 pounds. My number of colonies, spring count, was 80; number on Nov. 1st, 130, average stores, 20 pounds each, making 2,600 pounds more, or in all, 10,200 pounds of honey. Now to get this yield I used 1,000 extra extracting combs, and 1,000 frames filled with foundation, which were all filled or drawn but about 150, and after July 15th the honey-flow was very slim. Everything was covered with insects, and the conditions were unfavorable on every hand, even buckwheat gave but little honey. I do not think the bees gathered what was used as stores after the middle of July.

Basswood gave no honey noticeable. Raspberry, white clover and blue thistle are the principal sources from what the bees gathered last year. Stores were seriously reduced in the month of October, so that they had to be replenished before putting in outside cases for winter I have suffered in years before in not being faithful in this respect; in the future I will do better than I have the last year, for one colony has gone to rest already, and no doubt more will follow.

E. H. STURTEVANT.

Ft. Ann, N. Y., Feb. 2.

Gathering Honey and Pollen.

With 28 colonies of bees in the spring of 1893, I had no swarms, nor got any surplus honey; but left them on the summer stands in good condition. To-day, on examination, I find 5 colonies dead, and the rest strong with brood and eggs, and in good working order, carrying honey and pollen from the maple. F. W. WIEDEMANN.

Equality, Ills., March 1.

The Alcohol Test and Results.

FRIEND YORK:—I want to tell you about my experience with the honey tested by the alcohol process. When I saw that the editor of *Gleanings* was testing honey with liquor, I thought the thing was all safe, so I procured a small amount (just a quart) to make the test. Well, I put some pure honey in half of the liquor, and some counterfeit honey in the other half. I of course mixed it well, and waited the result. But, by the looks of each bottle, for my life I could not see any difference. So I thought I would test the thing a little closer.

I tasted the contents of the pure honey bottle, and I thought "That is pretty fair." Well, now, to carry the test fully out, I was compelled to taste the contents of the counterfeit bottle, and I thought "That is not so bad, after all." Well, I kept on tasting, first one bottle then the other, and I couldn't see any difference. Now was it the whiskey that killed the taste of the counterfeit honey, or what was ft? Of course, I left a little in each bottle for farther testing. Now shall I send this to the editors of some of the journals, or what shall I do with it?

Now for the feeling it produced upon the body. I suppose I felt about like Mrs. Jennie Atchley's Cyprian bees when they run the cattle off the premises 200 yards from the hives. Well, I believe after that test, I could have taken a colony of bees I have, and if I had been in Texas, I could have run every head of cattle out of that State. Of course, I would not have made the experiment if it had not been recommended by some of our prominent temperance leaders.

I am 64 years old, and had not tasted one drop of whiskey, to my knowledge, in 44 years until that test. Of course I didn't let my wife and children know anything about the test, and to avoid their company I took a "fox chase," but you know I did not see a single fox!

After all this hard test, and being misled, I am as much down on whiskey as I have been for the last 44 years.

Now shall I make a further test, or had I better defer it? JOHN FARIS.

Chilhowie, Va.

[Friend Faris, we think you had better "defer" any further experience of this kind.—ED.]

Wintering Well—A Blizzard.

Bees are wintering well thus far. I have 24 colonies packed in chaff and straw, and they all seem to be as quiet as kittens. My honey crop was light last year, being only 250 pounds. My spring count was 10 colonies, increase to 24, and average 10½ pounds per colony.

A genuine blizzard visited us on Feb. 13th, which upset things in general, the mercury running down to 10 degrees below zero, with 10 inches of snow.

CHAS. C. CHAMBERLIN.

Romeo, Mich., Feb. 26.

Hunt's Adulterated Honey.

Here is something more about Hunt's honey, to which I have seen many references in the BEE JOURNAL for the last few months, which interested me very much, and I would like to see the law of Minnesota so remedied that such a person could be fined and punished as he deserves.

I have a brother who clerks in a store at St. James, Minn., and about the middle of the winter an agent came to the store and sold extracted honey. Before saying any more, I would say that I had sold that same firm 130 pounds of nice basswood extracted honey in the fall, which they had sold in a short time, and asked for more, but I had none on hand.

The proprietor bought over 200 pounds of extracted honey from the agent, for pure honey, and the agent told him he would send a label with the honey, which would be as good as a label to certify to its purity,

after asking him where the labels were, or why there were no labels on it. The agent did send something he called a "label," but my brother says it looks more like a sign, which reads, "Pure extracted honey," and Hunt's name below; but this sign is hung up a little way off from where they keep the honey, and was sent to them a few days after the honey, as I understand it.

Another brother of mine has been out visiting the one that clerks at the store, and tells me that the honey looks now very much like jelly made of pig's feet, and that the firm will have trouble to dispose of it. If people buy of the stuff once, they will not come back again, and the grocery men see that they were cheated, and did not get pure honey. My brother wants to send me some of the honey as soon as I say so, but I would like to know what would be the best to do with it. Shall I send some of it to have it tried by some experts in testing, or shall I let it drop and not bother with it? To whom should I send a sample, if I receive the honey? I would be willing to take a little trouble, and have such mean adulteration stopped, if possible.

MATH. RADER.

Raven Stream, Minn., Feb. 26.

[You might send a sample of the stuff to Ernest R. Root, Medina, Ohio, who says he can detect glucosed honey by just tasting it. He no doubt would be pleased to get it. —ED.]

Directions for Moving Bees.

On page 249, Mr. Coleman, of Tennessee, asked for suggestions about moving his bees a distance of 30 miles. I will give the method recommended to a friend here, who had 40 colonies to move about 35 miles, which was done with success.

First, secure the frames so they will not jostle together or drop on the bottom-board on account of weak bearings. Put on an empty chamber above the brood-nest, with little or no obstruction between them; ventilate both well, and toe-nail all loose parts together.

For conveyance, put on ¼ load or more of straw, on a hay-rack, placing the hives in single tiers on this, so they will be level, and either packed solid together, or, if spaces are left between, stuff snugly with straw. Secure all in place with ropes. I generally use a wagon with side-boards well-filled with hay or straw for hauling bees, and sometimes honey, which I consider much better than a spring wagon when the road is rough.

JAS. A. POINDEXTER.

Bloomington, Ill.

Wintering Nicely—White Clover.

The ground is covered with about 3 inches of snow, and the mercury 8 degrees below zero this morning. The cold weather seems to hold on, considering the mild winter that we have had. I think that we can look for a bad March.

I examined my 80 colonies of bees in the cave at home, on Feb. 7th, and they seemed to be wintering nicely. We (mother and I) sold our farm at Murphy last fall, and we are now occupying one of my brother's houses about 2 miles north of Lynnville, not yet having bought another place. My friends will please address me at Lynnville.

Since coming down here I have purchased the bees and fixtures belonging to the estate of the late T. L. Byers, of Monroe, consisting of 109 colonies in 10-frame Langstroth hives, together with the fixtures. Mr. Byers was quite an extensive bee-keeper, having at one time between 300 and 400 colonies. Many of the readers of the BEE JOURNAL no doubt knew him well. He died two years ago last May. I will retain his old location if possible, as there are splendid accommodations, and it is near the river, with plenty of basswood. I have at present 189 colonies, if all are living, so I am interested in having a good season. I have been looking after the white clover; I think that it is alive, but I am afraid it is a little thin on the ground. My 1893 crop of honey was about 1,300 pounds, sold mostly at 10 cents in quantity at the honey-house, as I was busy moving. I have almost always peddled out my honey at home.

W. C. NUTT.

Lynnville, Iowa, Feb. 21.

Southern Queens vs. the Northern.

I notice your request for reports from those who have had experience with queens reared in both the North and South. As I have purchased 55 queens, my experience may be of some value; 40 of the queens were purchased in the South, and 15 in the North.

Of the 15 queens, only one proved to be an extra good queen, and I paid a New York breeder $3.00 for her; 13 more, bought of the same breeder, were unsatisfactory, with one exception. One queen from an Iowa breeder was no good.

Of the 40 queens from the South, three-fourths were good, and one-fourth from fair to worthless. The experience I have had with bees and queens convinces me that our long, cold winters so uses up the vitality of our bees and queens, that we of the North will never be able to compete with the South in the production of hardy, prolific bees and queens, unless we send South in the early spring for our breeding queens.

G. A. WRIGHT.

Glenwood, Pa.

Experience in Bee-Keeping, Etc.

I had a poor honey crop here the season of 1893, but of very good quality. I started in the spring last year with 25 colonies in poor condition; I lost 70 colonies during the previous winter—a heavy loss. I increased to 38 colonies, that seem to be wintering nicely in the new cellar. I had only one natural swarm, the others artificial. I

got 700 pounds of extracted honey, nearly all white clover, which I sold to my neighbors for 15 cents per pound. I had one colony that gave me 225 pounds alone; that colony had a very prolific queen. I bought the queen in the fall of 1892, from a Mr. Black, of Iowa. I used to buy a lot of queens from the East and South, but all were worthless to me, except that one I had from Mr. Black. I think we can rear queens here that are more suitable for this climate than those from the East and South. I sold all the honey I had, and I could not supply all the customers that I have. Still there is plenty of "honey" to be had in nearly all the grocery stores, but the adulterated honey has been in the market more this year than usual. We are now going to put a stop to it, as we have a law against adulterating honey. There are about a dozen bee-keepers in this vicinity who watch the matter very closely.

JOHN A. HOLMBERG.

St. Paul, Minn., Feb. 19.

Southwest Texas—The Other Side.

Bro. York, don't be scared about the "Old Reliable" losing its reputation on account of raising oranges on paper. I was in southwest Texas since the coldest weather this winter, and picked oranges off the trees, and they were not raised in a glass house, nor were the trees kept alive by the use of coal. On the other hand, they grew in a nice little grove in the little city of Beeville. I was there for several meals, and did not have to eat jerked beef and beans. I wish I was at the present time located in that part of Texas, and was able to own a piece of land; I would risk making a living.

Here is my name. P. M. ROBY.

Chanute, Kans., March 1.

More About Moving Bees.

In reply to C. H. Coleman's article on page 249, I will give my experience in moving bees.

Last spring I bought about 80 colonies, 7 miles from home, and moved them all in an ordinary farm wagon, with good results in each case. We tacked common screen-wire over the hive-entrance, so that the bees would be confined, and at the same time get plenty of air. Then we loaded them in the wagon so that the frames in the hives would be crosswise of the wagon. We put them in two hives deep, in order to haul a greater number at a time. Be sure to nail the entrance so it can't get loose, as the jar of the wagon will rile the bees greatly, and if they get out they will make "Rome howl!"

When you have reached your destination put them where you wish them to remain, and leave them there a short time, until they have become quiet, then remove the screen-wire quietly, and all is done.

I think that March is the best time to move them, and they should have a flight soon after being removed. A spring wagon would be all the better, if such can be had, although they will stand considerable jarring with safety. U. G. SMITH.

Bardolph, Ill.

Honey & Beeswax Market Quotations.

CHICAGO, ILL., Feb. 17.—We are encouraged by last week's business, disposing of considerable light honey in a small way at low prices—13@14c. It is impossible to obtain higher prices at present. We quote: No. 1, 13@14c.; extracted, 5@6½c. Beeswax, 21@23c. We have inquiries for beeswax, with none to offer. J. A. L.

ALBANY, N. Y., Jan. 14.—The honey market is in a slow and unsatisfactory condition. Very little demand for any and large stocks of both comb and extracted. Quotations would be only nominal. H. R. W.

CHICAGO, ILL., Jan. 25.—While the volume of trade in honey is not large there is an improved tone thereto We obtain 15c. for the best grades of white comb and our stock of this is not large. Grades not quite so good are selling at 14c., with buckwheat and other dark honeys bringing 11@12c. The weather has been too severe recently to permit of shipments being made. Extracted honey we quote at 5@7c. per pound according to quality and style of package. Beeswax, 22c.

R. A. B. & Co.

NEW YORK, N. Y., Jan. 24.—There is no change in our market. Trade remains dull with plenty of stock on hand of both comb and extracted honey. Beeswax is selling on arrival at 26@27c. H. B. & S.

CINCINNATI, O., Mar. 7.—Demand for honey is slow in sympathy with the general dull business all over the country. We quote extracted honey at 4@8c. a lb.; comb. 12@15c. for best white.

Beeswax is in fair demand, at 22@25c. for good to choice yellow. C. F. M. & S.

KANSAS CITY, MO., Dec. 21.—The demand for comb and extracted honey is not as good as we would like to see it. We quote: No. 1 white 1-lb. comb, 14@15c.; No. 2 white, 13@14c.; No. 1 amber, 13@13½c.; No. 2 amber 10@12c. Extracted, white, 6@7c.; amber, 5@5½c. C.-M. C. Co.

List of Honey and Beeswax Dealers,

Most of whom Quote in this Journal.

Chicago, Ills.

J. A. LAMON, 44 and 46 So. Water St.
R. A. BURNETT & Co., 161 South Water Street.

New York, N. Y.

F. I. SAGE & SON, 183 Reade Street.
HILDRETH BROS. & SEGELKEN, 28 & 30 West Broadway.
CHAS. ISRAEL & BROS., 110 Hudson St.

Kansas City, Mo.

HAMBLIN & BEARSS, 514 Walnut Street.
CLEMONS-MASON COM. CO., 521 Walnut St.

Albany, N. Y.

H. R. WRIGHT, 326 & 328 Broadway.

Hamilton, Ills.

CHAS. DADANT & SON.

Cincinnati, Ohio.

C. F. MUTH & SON, cor. Freeman & Central avs.